



Research Article

www.ijrap.net



MANAGEMENT OF ARTAVAKSHAYA (HYPOMENORRHOEA) WITH OBESITY BY A HERBAL COMPOUND

Vivek Mahalwar^{1*}, K.B.Mahapatra², Susmita P. Otta³

¹Lecturer, Department of Prasooti Tantra avam Stree Roga, Rajiv lochan Ayurved Medical College and Hospital, Chandkhuri, Durg (Chhattisgarh) India

²Professor, Department of Prasooti Tantra avam Stree Roga, Gopabandhu Ayurved Mahavidyalaya, Puri, Odisha India

³Research Officer (Ayurved), Ayurved Research Institute for mother and child Health care, Pujapura, Trivendrum, Kerala, India

Received on: 11/08/12 Revised on: 17/10/12 Accepted on: 02/11/12

*Corresponding author

E-mail: drmahalwarvivek@yahoo.com

DOI: 10.7897/2277-4343.03635

Published by Moksha Publishing House. Website www.mokshaph.com

All rights reserved.

ABSTRACT

Obesity per se represents a condition of sex hormone imbalance in women. Obesity is associated with three biochemical alterations that affect normal ovulation e.g. 1. Hyperinsulinaemia 2. Increased peripheral conversion of androgen to estrogen and 3. Decrease level of sex hormone binding globulin (SHBG) resulting in increased level of free oestradiol and testosterone. Level of sex hormone binding protein (SHBG) tends to linearly decrease with increasing body fat and this may lead to an increased fraction of free androgens and thus estrogen level decreases. SHBG levels are regulated by a complex of factor including estrogen, iodothyronies and growth hormone as stimulating agents and androgens and insulin as inhibiting factor. The net balance of this regulation with the dominant role of insulin which inhibits SHBG synthesis in the liver may be responsible for the decrease of SHBG concentration observed in obesity. Fat represent a site of intensive sex hormone metabolism and interconversion due to the presence of several steroidalogenetic enzymes such as 3 beta dehydrogenase, 17 beta hydroxydehydrogenase and the aromatase systems. Obesity may thus add further specific mechanism in the development of androgen excess in women and decreases oestrogen. The present clinical study was planned to assess the efficacy of an indigenous compound in sthoulya janya artavakshaya, which contains Sunthi, Pippali, Maricha, Vidanga, Tvak, Guggullu, Gomutra in equal quantity and was made vati and given in the doses of 1 gm three times a day with luke warm water. The effect of indigenous compound as evident in the clinical trial was recorded along with detailed data pertaining to the case history.

Key words: Obesity, Artavakshaya, trikatu, twak, vidang, gomutra

INTRODUCTION

Artava kshaya (Ksheena Artava) is one of the Artava dushti described in brihatrayee¹⁻³ and laghutrayee⁴. In Ksheena Artava menstruation is delayed, scanty and associated with pain in vagina⁵. It can be compared to Hypomenorrhoea on the basis of its signs and symptoms. When sleshmaja prakruti stree (obese) consumes kapha prakopak ahara then it vitiates the doshas mainly kapha which causes the meda vriddhi leading to abnormality in ritu chakra⁶. Further, vitiation of tridosha mainly vata causes artavavaha sroto dushti i.e. ksheena artava. Sthoulya and Medoroga are the two words used to describe the obese person in Ayurvedic literature. Charaka defines that excessive accumulation of Meda and Mamsadhatu causes Sphig (buttocks), Udara (abdomen) and Sthana (breast) to shake while walking and there is ayathopachaya (fat accumulation in places not specified for its accumulation) and loss of utsaha or enthusiasm is termed as Obese or Sthoola⁷. Globally an estimated 250 million adults are now obese and many more are overweight⁸. Females are more prone to become obese than males⁹. India is facing an obesity crisis with a number over 20 crores¹⁰. According to a research work by Carolus J.C.M. Hamilton with increasing Body mass index, the percentage of Oligomenorrhoea increased from 18% to 32%, the percentage of amenorrhoea increased from 2% to 13%. The overall percentage of anovulation increased from 32% to 55% due to obesity or overweight¹¹. Obesity induced Hypomenorrhoea is encountered by gynecologist

in daily practice. In this age of modernization and urbanization, obesity and menstrual disorders have become common due to faulty food habits, life style, stress etc. At present scanty and infrequent menstruation is treated by hormonal therapy. This therapy may lead to obesity¹². Herbal medicine can be of great benefit in obesity induced Hypomenorrhoea without the negative side effect of conventional drugs.

Obese woman suffers mental stress due to obesity and if she suffers from Hypomenorrhoea it leads to infertility. So correction of menstrual disorder is important. Without physical exercise and diet therapy the treatment of obesity induced Hypomenorrhoea is incomplete^{13, 14}. Nidan parivarjan i.e. treating obesity will correct ksheena artava. Sushrut mentioned agneyadravyas having artavajanana properties can be used in ksheenaartava dushti⁵. Agneya dravya having properties like deepana, pachana, chedana, lekhana, medohara pacifies Kapha and Vata dosha can be used to treat obesity.

MATERIALS AND METHODS

Selection of drug was aimed to achieve control over obesity induced Hypomenorrhoea. Five herbal drugs were taken in equal quantities and powdered (Table 1). Then bhavana of gomutra and guggulu was given 5 times to prepare the trial compound that is Vati of 1gm. Each drug was identified by Dravyaguna, Rasashatra and Bhaishajya Kalpana specialist (Dr PV Savnoor, Dr Bandeppa) of NKJ Ayurvedic medical college Bidar

Karnataka. Local college herbarium voucher numbers were provided for study.

Table 1: Trial Drugs

Name	Botanical Name	Family	Rasa	Guna	Virya	Vipak	Karma	Plant Part
Sunthi	<i>Zingiber officinale</i>	Scitaminae	Katu	Guru ruksa Tikshna	Ushna	Madhura	Dipana bhedana Vatakaphahara	Rhizome
Pippali	<i>Piper longum</i>	Piperaceae	Katu	Laghu Tikshna Snigdha	Ushna	Madhura	Dipana Vatakaphahara Vrishya Rasayana	Fruit
Marica	<i>Piper nigrum</i>	Piperaceae	Katu Madhura	Laghu Tikshna	Ushna	Katu	Vatakaphahara Dipana Vrishya	Fruit
Vidanga	<i>Embelia ribes</i>	Myrsinaceae	Katu	Laghu Kashaya	Ushna	Katu	Dipana Krimighna vrishaghana	seed
Tvak	<i>Cinnamomum zeylanica</i>	Lauraceae	Tikta Katu Madhura	Laghu Tikshna Ruksha	Ushna	Katu	Vatapittahara Grahi Pacana agnidipana Bhedan Lekhana	Stem Bark
Gomutra			Katu Tikta Kashaya	Laghu Tikshna Ruksha	Ushna	Katu	Vatakaphahara Pacana Bhedan Agnidipana Lekhana	
Guggulu	<i>Commiphora mukul</i>	Burseraceae	Katu Tikta	Laghu Ruksha Vishada Sukshma sara	Ushna	Katu	Tridoshahara Rasayana Lekhana	gum

Method

The study was conducted in the department of Prasooti tantra and Stree roga. 30 patients were selected on the basis of single blind, simple randomized sampling procedure from the Out Patient Department (O.P.D) and Indoor Patient Department (I.P.D) of Shri Siddharudha Charitable Hospital and research centre attached to the N.K.Jabshetty Ayurvedic medical college and P.G. Research centre, Bidar, Karnataka. All the obese patients with Body Mass Index (B.M.I.) 25 and above in child bearing group (20-35 years) having complaint of scanty menstrual bleeding were selected for study. Detailed history including gynecological and obstetric history were taken and noted on specially prepared research case sheet. Duration was 3 cycles. Follow up was after each menstrual cycle. Same type of physical exercise (brisk walking for 45minutes) and diet therapy was advised for both groups. Ethical clearance was obtained from institution and the study was carried out as per the ethical clearance No 03_A025_902.

Selection criteria

Inclusion criteria

1. Obese patient with Hypomenorrhoea
2. Patient age group from 20-35 years
3. All obese patients with B.M.I. 25 and above

Exclusion criteria

1. Drug induced obesity.
2. Obese patient with History of diabetes mellitus, hypertension etc.
3. History of Hormonal disorder like Hypothyroidism and Hyperthyroidism.
4. History of Tuberculosis, Nephritis.
5. History of Patient taking oral contraceptive pills.
6. Hyperprolactinemia and lactating mother.
7. History of Previous caesarian cases with obesity.

Parameters for assessment

Subjective Parameter

1. Obese patient having menstrual problems (scanty menstrual periods)
2. Gourava

3. Assessment of Chala, Sphiga, Udara and Sthana (Pendulous buttock, abdomen and breast)
4. Ati Pipasa, Ati kshuda, Ati nidra.
5. Dourgandhya.

Objective parameters

1. Body weight
2. Quantity of periodical blood flow (No. of pads/day).
Medicine was directly tried on humans. Following investigation was done during research:- Hemoglobin estimation, Total Leukocyte count, Differential Leukocyte Count, Erythrocyte Sedimentation Rate, blood sugar, lipid profile Thyroid profile and Ultra sonography (if required). All the selected patients fulfilling the criteria of selection were randomly divided in to 2 groups.

GROUP A: (Trial group) 15 Patients were given Indigenous Compound and advised physical exercise + diet therapy for 3 cycles. Dose of compound was 1gm. Three times a day (T.I.D.) with Luke warm water. **Follow up:** After 1st month, 2nd month and 3rd month.

GROUP B: (Control group) 15 patients were advised physical exercise with diet with appropriate calorie intake not exceeding 1200 calories/day (diet chart were provided to every patient) for 3 months.

Follow up: After 1st month, 2nd month and 3rd month.

Methodology

The progress was noted on basis of assessment parameters (both subjective and objective parameters) and noted in specially prepared case sheet. The observation was analyzed critically and scientifically. The result was evaluated for its significance. T test is used for statistical analysis.

RESULT

The criteria for assessment of result was based on improvement in cardinal symptoms like Obese patient having menstrual problems, Body weight, Quantity of periodical blood flow (No. of pads/day), According to the severity and intensity of the cardinal symptom. These were graded on the basis of scoring system. Chala, Sphiga, Udara and Sthana (Pendulous buttock, abdomen), symptoms were taken as common for overall result.

For the purpose of the assessment of result some grade points were used considering the severity of some common sign and symptoms like Chala Sphika Udara Stana, Ati Pippasa, Ati Nidra, Kashtartava, guruta etc are as follows.

Sign	Grade		Grade Point
++++	G ₄	=100/4	4
+++	G ₃	=100/3	3
++	G ₂	=100/2	2
+	G ₁	=100/1	1
-	Go	=00	0

Following result were obtained in parameters and analyzed

Effect on amount of bleeding

Table 2: Statistical Analysis of Effect on Amount of Bleeding in Group-B

Criteria	Before Treatment (Mean + SE)	Month	After Treatment (Mean + SE)	% Relief	Degree of Freedom	Standard Deviation	Test of Significant	Probability	
Amount of Bleeding	2.13±0.17	1 st	2± 0.2	6.25%	14	0.8	1.5	-	No Significant
		2 nd	1.5 ± 0.1652	28.12%	14	0.63	3.67	<0.001	Highly Significant
		3 rd	1.133± 0.2363	46.87%	14	0.91	5.91	<0.001	Highly Significant

*= S.D–Standard deviation, BT–Before treatment, AT–After treatment, df–Degree of freedom, t–Test of significant, p–Probability, HS- Highly significant, S-Significant

Table 3: Statistical Analysis of Effect on Amount of Bleeding in Group-A

Criteria	Before treatment (Mean + SE)	Month	After Treatment (Mean + SE)	% Relief	Degree of Freedom	Standard Deviation	Test of Significant	Probability	Remarks
Amount of Bleeding	2.27±0.15	1 st	1.73± 0.12	23.53%	14	0.46	4	<0.001	Highly Significant
		2 nd	1 ± 0.169	55.88%	14	0.645	8.264	<0.001	Highly Significant
		3 rd	0.4± 0.1309	82.35%	14	0.50	14	<0.001	Highly Significant

* = S.D–Standard deviation, BT–Before treatment, AT–After treatment, df – Degree of freedom, t –Test of significant, p –Probability, HS- Highly significant, S-Significant

Table 4: Comparison between Amounts of Bleeding

Criteria	Month	Trial group (Mean + SE)	Control group (Mean + SE)	Degree of Freedom	Test of Significant	Probability	Remarks
Amount of Bleeding	1st	0.533 ± 0.133	0.133± 0.0909	28	2.479	< 0.05	Significant
	2nd	1.267 ± 0.153	0.6± 0.1633	28	2.9767	< 0.001	Highly Significant
	3rd	1.867± 0.133	1± 0.169	28	4.025	< 0.001	Highly Significant

* = S.D–Standard deviation, BT–Before treatment, AT–After treatment, df–Degree of freedom, t–Test of significant, p –Probability, HS- Highly significant, S-Significant

Table 5: Statistical Analysis of Weight in Group-B

Criteria	Before treatment (Mean + SE)	Month	After Treatment (Mean + SE)	% Relief	Degree of Freedom	Standard Deviation	Test of Significant	Probability	Remarks
Weight	68±1.29	1 st	66± 1.25	1.51%	14	4.87	6.545	-	No Significant
		2 nd	66.23 ± 1.26	2.59%	14	4.91	10.09	<0.001	Highly Significant
		3 rd	65.6± 1.27	3.52%	14	4.95	11.52	<0.001	Highly Significant

* = S.D–Standard deviation, BT–Before treatment, AT–After treatment, df–Degree of freedom, t–Test of significant, p –Probability, HS- Highly significant, S-Significant

Table 6: Statistical Analysis of Weight in Group-A

Criteria	Before treatment (Mean + SE)	Month	After Treatment (Mean + SE)	% Relief	Degree of Freedom	Standard Deviation	Test of Significant	Probability	Remarks
Weight	69.8±2.9	1 st	68.1± 2.82	2.389%	14	10.9	7.02	<0.001	Highly Significant
		2 nd	66.33 ± 2.69	4.92%	14	10.43	8.35	<0.001	Highly Significant
		3 rd	64.87± 2.587	7.023%	14	10.02	8.80	<0.001	Highly Significant

* = S.D–Standard deviation, BT–Before treatment, AT–After treatment, df–Degree of freedom, t–Test of significant, p –Probability, HS- Highly significant, S-Significant

Table 7: Comparison between Weights of two groups

Criteria	Month	Trial group (Mean + SE)	Control group (Mean + SE)	Degree of Freedom	Test of Significant	Probability	Remarks
Weight	1 st	1.66 ± 0.23	1.03± 0.157	28	2.22	< 0.05	Significant
	2 nd	3.43 ± 0.41	1.76± 0.175	28	3.73	< 0.001	Highly Significant
	3 rd	4.9± 0.556	2.4± 0.208	28	4.20	< 0.001	Highly Significant

* = S.D–Standard deviation, BT–Before treatment, AT–After treatment, df–Degree of freedom, t –Test of significant, p –Probability, HS- Highly significant, S-Significant

Table 8: Clinical assessment of overall result of Group B patients

Result	1 st month	2 nd month	3 rd month
Cured	00	00	00
Max. Improved	00	2(13.33%)	2(13.33%)
Mod. Improved	5(33.33%)	4(26.66%)	7(46.66%)
Mild Improved	7(46.66%)	8(53.33%)	5(33.33%)
No improvement	3 (20%)	1 (6.66 %)	1(6.66 %)

Table 9: Clinical assessment of overall result of Group A patients

Result	1 st month	2 nd month	3 rd month
Cured	00	00	00
Max. Improved	00	3(20%)	11(73.33%)
Mod. Improved	8(53.33%)	11(73.33%)	4(26.66%)
Mild Improved	7(46.66%)	1(6.66%)	00
No improvement	00	00	00

In Group B, 1st month 6.25%, 2nd month 28.12%, and 3rd month 46.87% relief are shown. The statistical evidence shows that there is a highly significant difference between before and after treatment in 2nd and 3rd month in amount of bleeding and no significance difference in 1st month. (Table 2)

In Group A, 1st month 23.53%, 2nd month 55.88% and 3rd month 82.35% relief are shown. The statistical evidence shows that there is highly significant difference between BT and AT in 1st, 2nd and 3rd month in amount of bleeding. (Table 3)

There is a significant difference found in Group A and Group B in 1st month. However there is also highly significant difference between 2nd and 3rd month in amount of bleeding. (Table 4)

In Group B, 1st month 1.51%, 2nd month 2.59% and 3rd month 3.52% relief are shown. The statistical evidence shows that there is a no significant difference between

before and after treatment in 1st month. However, there is a highly significant difference BT and AT in 2nd and 3rd month in weight. (Table 5)

In Group – A, 1st month 2.389%, 2nd month 4.92% and 3rd month 7.023% relief are shown. The statistical evidence shows that there is a highly significant difference between before and after treatment in 1st, 2nd and 3rd month in weight. (Table 6)

There is a significant difference found in Group – A and Group–B in 1st month, and highly significant difference in 2nd and 3rd month in weight. (Table 7)

Clinical assessment of overall result is showing that there was mild improvement in common cardinal sign and symptoms i. e. Chala Spika Udara Stana, Ati pippasa, Ati Nidra, Kashatartava and Guruta in-group B patients where as maximum improvement was in the group A patients. There was no completely cured patient. (Table 8 and 9)

Over all Result

Table 10: Total cases of group B

Result	No. of pts	Percentage
Maximum Improvement	2	13.33%
Moderate Improvement	1	6.67%
Mild Improvement	11	73.33%
No Change	1	6.67%

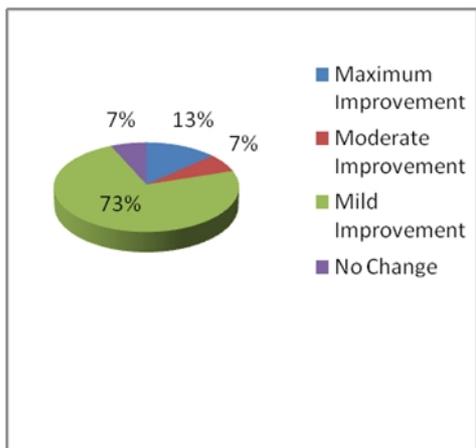


Figure 1: Overall result of group B patient

Table 11: Total cases of group A

Result	No. of pts	Percentage
Maximum Improvement	5	33.33%
Moderate Improvement	10	66.66%
Mild Improvement	00	00.00%
No Change	0	00.00%

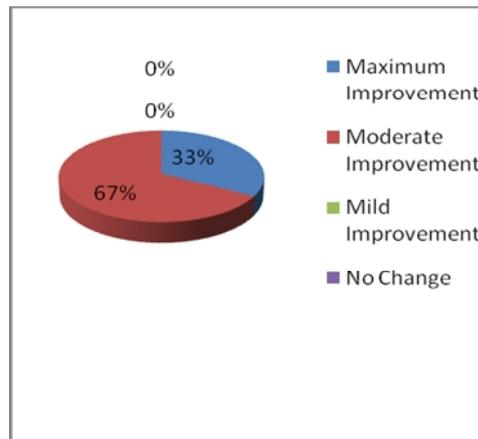


Figure 2: Overall result of group A patient

DISCUSSION

Amount of Bleeding -When the quantity of blood loss is considered 46.87%, patients got cured in Group -B and 82.35% cured in Group -A. This shows that both the therapies were effective but Group-A was more effective than Group-B. The statistical evidence shows that there was highly significant difference between BT and AT in 1st, 2nd and 3rd month.

Weight -When the weight is considered then 3.52% were relief in Group -B and 7.023% were cured in Group -A with exercise and controlled diet. This shows that both the

therapies were effective but Group-A was more effective than Group-B. The statistical evidence shows that there was a highly significant difference between before and after treatment in 1st, 2nd and 3rd month.

The present study evidenced that the both group helps in reducing the diseases, and group A is more effective than the group B. Drug action depends upon the rasa, Guna Virya, Vipaka and Prabhava of drug. The trial drug is having agneya quality, which is responsible for Kapha and vata, shamana and pitta vardhana. Pharmacological action of these drugs is responsible in two ways i.e., one

is to improve the dhatus Prasad amsha and the other is to stimulate the menstruation as well as helpful for weight reduction i.e., the reason the drug has been found successful in treating the cases which were enrolled. The effect of both the therapies on cardinal symptoms of arthavakshaya showed that, trial drug, (A combination of Shunthi, pippali, maricha, twak, vidanga, guggulu and gomutra) was more effective to increase duration of menstrual period, to decrease inter menstrual period, increase the quantity of blood loss and also capable for weight reduction. Finally the clinical assessment was carried out on the overall results of the effect of an herbal compound on each and common sign and symptoms (chala sphika udara stana, Atipippasa, Atinidra, Kashatartava, Guruta) and collectively presented in the form of improved, cure and non-improvement. However it was evidenced that after 3 Months of the study there was no patient who cured 100%, But 66.66% patients were in the maximum improved state. Even the statistical analysis on individual sign and symptoms clarified that favorable results were obtained on Amount of Bleeding (82.35%) and Weight (7.023%), Hence it was revealed from the present clinical study that the treatment of Sthoulyajanya Artavakshaya (Obesity induced Hypomenorrhoea) by a herbal compound was safe, gentle, economical, without side effect and significantly effective with $P < 0.001$. It also proves that both disease have relation with each other.

CONCLUSION

Menstrual irregularities have adverse impact on women if not diagnosed and treated properly. When menstrual abnormality is associated with weight gain it indicates about the hormonal imbalance. Artavakshaya is caused by tridosha that can be attributed to dosha vitiation. It occurs due to involvement of vata and kapha, which can be attributed to marga avarodha of artava vaha strotas. Medadhatuvridhi is described under ashthanidita awastha in ayurveda that signifies metabolic dysfunction. Sthoulyajnya artava kshaya is a condition involving deranged metabolism and multiple hormonal involvements. Artavakshaya is related to medasvi awastha and increases with the present life style and faulty food habit. In the present study group A (trial group of 15 patients) were given with indigenous compound in a dose of 1 gm TID with Luke warm water for consecutive 3 menstrual cycles with brisk exercise and diet, not exceeding 1200 K cal / day for consecutive 3 menstrual

cycles and Group B (Control group of 15 patients) advised brisk exercise and diet, not exceeding 1200 K cal / day for consecutive 3 menstrual cycles. The overall effect of the indigenous compound was found significant. After treatment there was no complete reduction in weight. Sthoulyajanya artavakshaya is a disease, which requires long-term treatment along with regulated diet and exercise. The present study was conducted with limited time, limited facilities and limited number of patients. A study of larger group with hormonal assay of patients may help to comprehend the mode of action of the trial drug.

REFERENCES

1. Shastry A. Sukrasoditsudham shariram adhyay. 14th Edition, Sushruta Samhita I part, (Published by Chaukhambha publications Varanasi); 2003 p 9.
2. Sharma S. Sharira Sthana Garbhavakranti. Ashtangasangraha, /23, Editor: Mitra J (Published by Chaukhambha Sanskrit Series Office Varanasi); 2006 (1) p 268.
3. Murthy KRS, Sharira Sthana / Garbhavakranti /10. Ashtanghridayam, I part, (Published by Chaukhambha Krishana das academy Varanasi); 2007 p 361.
4. Srikantha MKR. Rogaganana adhyaya. 4 th Edition, Sarangadhara Samhita Purva Khanda /175, (Published by Chaukhambha Orientalia Varanasi); 2001 p 45.
5. Shastry A. Dosha dhatu mala kshayavidhi vigyanoadhayaay. 14th Edition, Sushruta Samhita, I part, susruta sutra sthana/ 16, (Published by Chaukhambha publications Varanasi); 2003 p 59.
6. Sharma S. Garbhavakranti. 1st Edition, Ashtangasangraha, sharira sthana/64, Editor: Jyotir M (Published by Chaukhambha Sanskrit Series Office Varanasi); 2006 p 274.
7. Tripathi B. Ashatanidiya adhyaya. Carak Samhita sutra sthana/9, (Published by Chaukhambha Surbharati prakashan Varanasi); 2004 p 401.
8. Murty SN, Maheshwar T, Suryawanshi MN. Medo roga (obesity) and it's management. Deerghayu international journal 2003; 23 (91): 71-76.
9. Saad MF, Damani S, Gingerich RL. A sexual dimorphism Plasma leptin consantration. Jclin Endometrinoini mean 1997; 82: 579.
10. Himalaya info line. Obesity in India: a survey by the All India Institute of Medical Sciences. The Himalaya Drug Company Bangalore 2007; 5 (Q-3) 6.
11. Carolus JCM. Hamilton. Kamal A. Ulla V. High Prevalence of Obesity in a Saudi Infertility Population. FRCOG 1995.
12. Bourne and Hawkins. Shaw's text book of Gynecology, (published by B.I. Churchill Livingstone Pvt. Ltd., delhi); 1989 p 336.
13. Tripathi B. Ashatanidiya adhaya. Carak Samhita sutra sthana/28 (published by Chaukhambha Surbharati prakashan Varanasi); 2004 p 405.
14. World Health Organization. Obesity: Preventing and Managing the Global Epidemic. Geneva: World Health Organization; 1997.

Cite this article as:

Vivek Mahalwar, K.B.Mahapatra, Susmita P. Otta. Management of Artavakshaya (hypomenorrhoea) with obesity by a herbal compound. Int. J. Res. Ayur. Pharm. 2012; 3(6):847-851

Source of support: Nil, Conflict of interest: None Declared